

ORGANIC CHEMISTRY Overview

1. Aliphatic Hydrocarbons:

1. **saturated, unsaturated**
 1. **Alkanes:** prop**ane**
 2. **Alkenes:** eth**ene** or ethylene
 3. **Alkynes:** buty**ne**
 4. **Linear, Branched, Cyclo-**

2. Aromatic Hydrocarbons

1. Substitution: ortho, para, meta

3. Nomenclature

1. Carbon chain length: prefix
2. -ane, -ene, yne suffix

4. Functional Group

- | | | |
|----------------------|-------------------|------------------------------------|
| 1. Alcohol: | R-OH | methan ol or methyl alcohol |
| 2. Aldehyde | R-COH | hexan al |
| 3. Carboxylic Acids: | R-COOH | methan oic acid |
| 4. Ethers: | R-O-R' | methyl ethyl ether |
| 5. Amines | R-NH ₂ | propylamine |
| 6. Esters | R-COO-R' | butyl propanoate |

5. Isomers

1. **Geometric:** *cis, trans*
2. **Positional:** location of functional group or double/triple bond
3. **Optical**

6. Reactions

1. **Substitution:** Alkanes + halides: $\text{CH}_4 + \text{Cl}_2 \rightarrow \text{CH}_3\text{Cl} + \text{HCl}$
2. **Addition:** Alkene + halide/hydrogen: $\text{CH}_2\text{CH}_2 + \text{H}_2 \rightarrow \text{CH}_3\text{CH}_3$
3. **Elimination** Alkene: eliminate across double bond
4. **Ester formation:** acid + alcohol \rightarrow water + ester